

- Fig. 4. Drawing of wax model of Left Upper Deciduous Molar. Postero-internal view. Stage III.
5. Section through Left Upper Permanent Incisor, showing Labial down-growth of Dental Lamina. Stage I.
 6. Section through Successional Molar. Stage III.
 7. Crown-surfaces of the last two Upper Molars of
 - A. *Dolichotis platycephalica* (after Ameghino).
 - B. *Cavia cobaya*. Both much enlarged.
 8. Crown-surface of Upper Molar of
 - A. *Stichomys constans*. Inferior Eocene (after Ameghino).
 - B. *Spaniomys riparius*. " " " "
 - C. *Hystrix leucura*. Recent. (Camb. Univ. Zool. Mus.)
 9. Section through Deciduous and Successional Molars of *Cavia*, showing "concentric epithelial body" in connection with the former. Stage II.
 10. Section through a Posterior Molar, showing lateral position of the root.

Contributions to the Malacostracan Fauna of the Mediterranean.

By ALFRED O. WALKER, F.L.S.

[Read 7th March, 1901.]

(PLATE 27.)

THE following results of a short stay at Cannes and Hyères are interesting as showing what may be done in a few hours' dredging from an open boat, in depths never exceeding 35 fath., and with the simplest apparatus. This consisted of a tow-net of tiffany (such as is used by gardeners for shading greenhouses), strengthened at the bag end by cheese-cloth sewn over it for about 2 ft. in length, and attached to a cane rim 6 or 8 in. in diameter. The cane is important, as the net should be as light as possible so as not to scoop up the sand, in which case it fills up immediately. This net is attached to a stone heavy enough to remain on the bottom while the boat is rowed rather quickly; the distance of the net from the stone varying from 3 feet on coarse sand to 6 feet or more on mud. The stone stirs up the Crustacea, which find their way into the net with a certain amount of sand, though far less than in the case of a dredge (however light), or metal-rimmed tow-net. This, with two small buckets such as are used by children at the sea-side, a small muslin-bag attached to a brass rim with a brass grating on the top, two or three glass jars (*e. g.* French-plum jars), 75 fathoms of line, and plenty of tubes large and small, constitute the

entire apparatus required. A basket 18 inches by 12 inches, by 10 inches deep, contained the whole. An open boat rowed by one man was used. I dredged five times at Cannes and once at Hyères, for about 2 hours each time.

The total numbers of species in each division of the Malacostraca were as follows:—

Podophthalmata	10
Schizopoda, including 1 new species	8
Cumacea.....	9
Isopoda exclusive of Chelifera, 2 new species	9
Amphipoda, including 2 new species and 2 not previously recorded in the Mediterranean ...	41
Pantopoda.....	1
	<hr/>
	78
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I need hardly say that other classes of marine animals were also brought up, especially Nudibranchs, some of which were most beautifully coloured. One of these was ultramarine-blue with 2 or 3 longitudinal white stripes; another had the inside of the wavy mantle dark green, while the rest of the animal was white with scarlet spots.

The following were the stations:—

Cannes.

1. Feb. 4. A short distance S. & S.W. of the breakwater, 10 fath., sand.
2. Feb. 8. Cap d'Antibes, shore among stones and *Posidonia*-fragments.
3. Feb. 10. West end of Ile Ste. Marguerite, 15–20 fath., sand and broken Corallines; decomposed *Posidonia*.
4. Feb. 16. Half a mile to 1½ mile S.E. of Croisette Point, 14 fath. (sand and *Posidonia*, “a”) to 25 fath. (mud, “b”).
5. Feb. 18. West end of Ile Ste. Marguerite, farther out than on the 10th, 25–35 fath. Coarse sand and broken shells.
6. Feb. 21. Between the breakwater and Croisette Point, 15 fath., sand and *Posidonia*.

Hyères.

- 1 II. Mar. 1 & 3. Shore at Pomponia, stones and *Posidonia*-fragments.

2 H. Mar. 6. Between Pomponia and Carquerannes, 2-4 fath., sand and *Posidonia*.

The shore is for the most part sandy and covered with the spiny débris of *Posidonia Caulini*, Kön. (= *Zostera oceanica*, All.). On the rocks at Cap d'Antibes, and at Pomponia, Hyères, I was unable to find any Hydrozoa or Polyzoa, and Algæ were extremely scarce.

BRACHYURA.

PACHYGRAPSUS MARMORATUS (*Fabr.*).

Under stones. St. 2, 1 H.

In its habits this species resembles our familiar shore-crab, *Carcinus mænas*, but runs more swiftly when disturbed.

ACHEÆUS CRANCHII, *Leach*.

St. 5. One young.

ANOMURA.

EUPAGURUS ANGULATUS (*Risso*).

St. 5. One specimen.

GALATHEA sp.

St. 5. One: too young for identification.

MACRURA.

CRANGON SCULPTUS, *Bell*.

St. 3, 5.

One specimen was infested with a parasite under the thorax.

ATHENAS NITESCENS, *Leach*.

St. 5. Three very young.

HIPPOLYTE VIRIDIS (*Otto*).

St. 1, 2 H.

Several, including a few with one tooth at the base of the rostrum on the upper side. All were bright green.

HIPPOLYTE GRACILIS (*Heller*).

St. 2 H. Four or five.

HIPPOLYTE VARIANS, *Leach*.

St. 6. A few young.

PALEMON SQUILLA (*Fabr.*).

St. 5. One young.

SCHIZOPODA.

SIRIELLA CLAUSII, *Sars.*

Cannes and Hyères, 2-30 fath.

This was the most abundant crustacean I met with: most of the specimens were immature.

ANCHIALUS AGILIS, *Sars.*

St. 3, 5, 6. Several.

ERYTHROPS ELEGANS, *Sars.*

St. 5. Three young.

PSEUDOMMA, sp.

St. 5. A head only.

MYSIDOPSIS GIBBOSA, *Sars.*

St. 4 *a*, 4 *b*. Three or four.

Genus MYSIDOPSIS ?

MYSIDOPSIS (?) SERRATICAUDA, n. sp. (Pl. 27. figs. 1-6.)

St. 3. One adult female. Length 5 mm.

General form rather slender. Carapace smooth, the frontal margin somewhat produced, forming an obtuse angle.

Eyes subglobose, the greater part occupied by the pigment.

Upper antennæ much as in *M. didelphys*, Norman.

Lower antennæ also of the usual form; antennal scale narrow lanceolate, more than twice as long as the peduncle, and eight times as long as wide at the base; terminal joint very small.

Legs slender, about as long as the antennal scale; tarsus, including the terminal tuft of setæ and the nail, about as long as the preceding joint; its first joint about twice as long as the 2nd and rather longer than the 3rd.

Telson about as long as the inner uropod, tapering gradually, with 9 *teeth* (not spines), increasing in size towards the extremity, on each margin, and two strong *spines* on each side of the emarginate apex.

Inner uropod very little shorter and narrower than the outer; a strong spine at the base.

Mandibular palp apparently absent.

Length including uropods 5 mm.

Easily distinguishable by the serrate or dentate margins of the telson. *M. angusta*, Sars, which has the basal part of this

member dentate, is its nearest ally. The absence of a palp to the mandibles will probably require the formation of a new genus when the male is taken.

LEPTOMYSIS APIOPS, *Sars*.

St. 5. Three or four.

DIAMYSIS BAHIRENSIS (*Sars*).

St. 1, 6. Two or three young.

CUMACEA.

CUMA SCORPIOIDES (*Mont.*).

St. 2 H. Two males, two females, all immature. Length 4 mm.

CUMA PULCHELLA, *Sars*.

St. 1. One young female. Length 2 mm.

IPHINOË SERRATA, *Norman*.

St. 3, 5, 6.

The commonest Cumacean at Cannes: all the specimens were immature. This is now considered by G. O. Sars to be distinct from *I. trispinosa* (Goodsir), of which he formerly believed it to be a mere variety (Crust. of Norway, vol. iii. p. 14).

CYCLASPOIDES CORNIGERA (*Sars*).

St. 3. Four specimens.

DIASTYLIS RUGOSA, *Sars*.

St. 3, 5, 6. Several.

DIASTYLOIDES BIPPLICATA, *Sars*.

St. 3, 5, 6. Five specimens. Length 3.25 mm.

None of the specimens had more than 4 marginal spines on the telson instead of 12: this is probably a condition of immaturity.

PSEUDOCUMA CERCARIA (*v. Beneden*).

St. 6, 2 H. Two specimens.

CUMELLA PYGMÆA, *Sars*.

St. 6. One female. St. 2 H. One male.

NANNASTACUS LONGIROSTRIS, *Sars*.

St. 2 H. One female.

ISOPODA.

CHELIFERA.

Several species of these were taken and have been placed in the able hands of Mons. A. Dollfus, who has kindly undertaken to name them.

FLABELLIFERA.

Fam. ANTHURIDÆ.

Genus HYSSURA, *Norman & Stebbing*.

HYSSURA SPINICAUDA, n. sp. (Pl. 27. figs. 7-11.)

St. 2 H. Two specimens.

Head about the same length and width as the first segment; frontal margin slightly produced in the middle. Eyes wanting.

Mesosome: the first and last segments the shortest, next the 3rd; remaining segments longer, subequal.

Metasome exclusive of the telson rather wider than the mesosome; not as long as its last two segments; segments well defined, 6 in number, including the caudal segment.

Antennæ: the upper not reaching the end of the peduncle of the lower; joints of the peduncle swollen; flagellum 3-jointed, as long as the last joint of the peduncle. Lower antennæ not bent outwards, peduncle 5-jointed, the last joint the longest; flagellum 7-jointed, rather longer than the last joint of the peduncle.

Legs: the first 3 pairs subchelate, the 2nd pair the broadest, then the 1st, the 3rd much smaller; the propodos oval, the 1st joint longer and wider than the 2nd, about as long as the 5th (propodos), the 3rd joint expanded anteriorly to support the base of the 5th, the 4th is articulated to the hinder angle of the 3rd and forms an elongate triangle of which the inner margin lies along the posterior margin of the propodos. The 1st pair has the propodos relatively narrower than the 2nd. The remaining (ambulatory) legs are short and of the usual form: all are attached to the front of their respective segments, except the 7th which are attached to the hind part.

Uropoda narrow oblong, the rami subequal; the outer and uppermost rather the narrower and armed with three or four long and strong spines on the inner margin.

Telson elongate triangular, about as long as the uropods, with 6 or 7 short spines on each margin, and a few divergent setæ on the apex which is rounded.

Length 3 mm.

The genus *Hyssura* has hitherto been known only from a single specimen of *H. producta* described by Norman & Stebbing in their "Isopoda of the 'Lightning,' &c." (Trans. Zool. Soc. vol. xii. Part iv. 1886, p. 128, pl. xxv. fig. v.), and dredged by H.M.S. 'Valorous' in 1875 in the North Atlantic in lat. 56° N., long. 37 W., in 1450 fath. It is difficult to imagine a greater contrast in the conditions of life than exists between the bright light and high temperature of the Mediterranean, where I could plainly see the bottom with its alternate patches of weed and sand, and the cold and darkness of the Atlantic at such a depth! Yet the apparent differences of structure are very slight—only the relative proportions of the first 3 pairs of legs, and the spines on the uropods and telson, which do not exist in the Atlantic species. There is no vestige of eyes in either species.

PARANTHURA NIGRO-PUNCTATA (*Lucas*).

St. 1. One young.

Fam. CIROLANIDÆ.

EURYDICE ACHATA (*Slabber*) = *E. pulchra*, *Leach*.

St. 2 H. Two young.

Fam. SPHÆROMIDÆ.

SPHÆROMA SERRATUM (*Fabr.*).

St. 2. Several.

DYNAMENE RUBRA (*Mont.*).

St. 1 H. One young.

CAMPECOPEA CORALLINA?, *Risso*.

St. 1 H. One young.

A SELLOTA:

Fam. JANIRIDÆ.

JÆROPSIS DOLLFUSI, *Norman*.

St. 5. One. Length 3.5 mm.

The only previous record is from the island of Capri, Bay of Naples (Ann. & Mag. Nat. Hist. ser. 7, vol. iv. p. 290, pl. v.).

Fam. MUNNIDÆ.

PLEUROCOPE, n. gen.

(Greek *pleuron*, side, *kōpē*, handle, from the form of the lateral processes.)

General form of the body like *Pleurogonium*: sides of the segments and head produced and terminated (except the 4th and 7th) by a conspicuous process.

Head large, deeply sunk in the 1st segment, with a lobe at the base of the upper antennæ and a process behind the lower antennæ.

Upper antennæ shorter and slighter than the lower.

Mandibles not seen.

Maxillæ as in *Pleurogonium*.

Maxillipedes with the inner plate very broad; palp slender; epignath oval, rounded.

Legs scarcely increasing in length posteriorly.

Caudal segment long and tapering.

Uropoda conspicuous, with two subequal rami; they are placed near the base of the caudal segment.

This genus differs from *Pleurogonium*, its nearest ally, in the large size and peculiar appendages of the head, the different relative proportion and structure of the antennæ, in the form of the caudal segment, and in the position and size of the uropods, which are unusually large for this family.

PLEUROCOPE DASYURA, n. sp. (Pl. 27. figs. 12-18.)

St. 1. One female.

Body minutely granulate; lateral processes of the body and head linear and terminated by a long spine-like seta directed backwards and two smaller setæ. The 4th segment has a single curved seta directed forwards in place of the process. The caudal segment is as long as the five preceding, tapering rapidly to the middle and thence gradually to a point. The distal half is clothed with setæ directed backwards and increasing in length distally; on each side of the apex there is a curved seta directed outwards and slightly forwards. The operculum in the female is pyriform, with two long setæ at the apex.

Antennæ: upper shorter than the width of the head, and barely reaching to the end of the peduncle of the upper; the 3-jointed peduncle rises from the base of a narrow lobe directed

forwards and terminated by a row of divergent setæ; the 1st joint about half the length of either of the others. The 6-jointed flagellum about equals the peduncle. The lower antennæ are much stronger than the upper; the peduncle 2-jointed; the flagellum 4-jointed, hardly as long as the peduncle.

First pair of legs but little shorter than the others, the 1st and 2nd joints subequal and narrow, shorter than the 5th (propodos); the 3rd and 4th short, the latter produced and terminated by 4 or 5 spines; the 5th long-oval; the dactylus long, with a secondary tooth near the base.

Ambulatory legs as in *Pleurogonium*.

Uropoda placed near the base of the caudal segment, the peduncle about half the length of the subequal rami, with two long divergent setæ at the distal end; rami about as long as the lateral processes, and similarly armed with retroflexed spines or setæ.

Length 1.2 mm.

I am much indebted to Mr. Andrew Scott for dissecting and figuring this minute and curious Munnid. I have no hesitation in saying that without his kind assistance I should have been unable to describe it.

ONISCOIDA.

Fam. LIGIDÆ.

LIGIA ITALICA, *Fabr.*

St. 1 H.

Common at Pomponia, where it may be seen running rapidly over the stones on the shore in full sunshine. The larger individuals had a whitish patch on the back.

AMPHIPODA.

HYPERIIDÆ.

PHROSINA SEMI-LUNATA, *Risso.*

St. 4b. One young. Length 3 mm.

GAMMARIDÆ.

Fam. ORCHESTIIDÆ.

HYALE PONTICA, *Rathke.*

St. 2 H. A few young.

ALLORCHESTES AQUILINA (*Costa*). (Pl. 27. fig. 19.)

= *Amphithoë aquilina*, *Costa*. *Hyale aquilina*, Della Valle.
St. 1 H. Several, male and female.

The carpus of the 2nd gnathopods of the male is produced into a slender spur. This is not shown in Della Valle's figure, and brings the species into the genus *Allorchestes* as defined by Stebbing (Trans. Linn. Soc. 2nd ser. vol. vii. pp. 397/8).

ALLORCHESTES PLUMICORNIS (*Heller*). (Pl. 27. figs. 20, 21.)

Nicea plumicornis, *Heller*.

St. 1. Several ; males, females, and young.

I am glad to be able to confirm Mr. Stebbing's opinion (*l. c.* pp. 412/3), that Heller mistook males for females. The second gnathopod in the female differs entirely from Heller's figure. The lower antennæ, however, are hairy in both sexes though less so in the female. This is one of several species wrongly united with *Hyale Prevostii*, M.-Edw., by Della Valle.

Fam. LYSIANASSIDÆ.

ORCHOMENE HUMILIS (*Costa*) = *O. Batei*, *Sars*.

St. 3. One young.

Fam. PONTOPOREIIDÆ.

UROTHOË sp.

St. 2 H. One female, too young for identification. Length 2 mm.

Fam. PHOXOCEPHALIDÆ.

Genus METAPHOXUS, *Bonnier*,

Camp. du *Caudan*, Ann. l'Université de Lyon, 1896, p. 630.

This genus was founded by Bonnier for *Metaphoxus typicus*, a species which, as he says, is extremely near to *Phoxocephalus pectinatus*. The genus appears to be a natural one, and should I think include *P. Fultoni*, *Scott*.

M. FULTONI (*T. Scott*) = *Phoxocephalus chelatus*, Della Valle.

St. 5, 2 H. Several.

M. PECTINATUS (*A. O. Walker*). (Pl. 27. fig. 22.)

1896. *Phoxocephalus simplex*, Calman, Trans. Roy. Irish Acad.
vol. xxx.

1900. *P. simplex*, Norman, Ann. & Mag. Nat. Hist. ser. 7,
vol. v. p. 335.

1900. *M. pectinatus*, Chevreux, Résult. des Camp. scientifiques &c., Amphipodes de l'*Hirondelle*.

Not *Phoxus simplex*, Bate or Bate & Westwood.

I regret that I cannot agree with so eminent an authority as Dr. A. M. Norman in uniting this species with *Phoxus simplex* of Sp. Bate. In order to show the identity of the two species, Dr. Norman has to reject Bate's type specimen in the British Museum and to adopt the descriptions (insufficient at best) in the Brit. Mus. Catalogue and the Brit. Sessile-eyed Crustacea—which agree neither with each other (as he admits) nor with *M. pectinatus*—and the figures of a notoriously inaccurate draughtsman!* Surely this is not the kind of evidence on which a published species should be annulled! This is not the first time that *P. simplex* has been wrongly appropriated, Boeck having assigned *Leptophoxus falcatus*, Sars, to it in 1872.

I have pointed out some of the differences between the two species in Ann. & Mag. Nat. Hist. ser. 6, vol. xviii. p. 157, and I now give a figure of the head of Bate's type specimen of *Phoxus simplex* in the British Museum (Pl. 27. fig. 23).

HARPINIA NEGLECTA, Sars.

St. 4 b. A few.

HARPINIA CRENULATA, Boeck.

St. 5. Several, very small.

Fam. AMPELISCIDÆ.

AMPELISCA DIADEMA (Costa).

St. 4 b. Five young.

Della Valle refers *A. tenuicornis*, Liljeb., to this species, to which it is certainly nearly allied. My specimens are too young to determine the question.

AMPHILOCHUS NEAPOLITANUS, Della Valle.

St. 1 H. Two young. Length 1.5 mm.

Dr. A. M. Norman refers *A. melanops*, Walker, to this species, and hints that *A. brunneus*, D. V., might also be joined to it. I concur in this, especially as regards the last named, as I hold that *A. melanops* has a closer affinity to *A. brunneus* than to *A. neapolitanus*. Of this last Della Valle says not only that the

* Conf. Stebbing, 'Fauna Hawaiiensis,' p. 530.

carpal process reaches to the extremity of the posterior margin of the hand, as quoted by Norman, but that it goes beyond it ("raggiunge ed oltrepassa")*. This I have never seen in any British specimen, but it is the case with one of the Hyères specimens, while in the other it just reaches the palmar angle, as is the case with many British examples. On the other hand, I have a specimen from Jersey in which the process only reaches to the middle of the posterior margin; while in another, taken at the same time and place, it covers about two-thirds of it. Other specimens (from N. Wales) have the process longer in various degrees; and it may therefore be taken to be an unreliable character for purposes of classification.

Besides the difference in the carpal process, Della Valle says that the hand of the 2nd gnathopods in *A. neapolitanus* is much wider ("molto piu larga") than that of the 1st, while in *A. brunneus* they are almost alike except that the 2nd is larger. The figures correspond with the description. I find, however, that this, as well as the extent to which the palmar angle is rounded off, is another variable feature.

When *A. melanops* was published as a species, *i. e.* before the discovery of the intermediate forms, the three species were easily definable as follows:—

Carpal process of 2nd gnathopods reaching to	$\left\{ \begin{array}{l} (1) \text{ the middle of the post.} \\ \text{margin of the propodos.} \\ (2) \text{ beyond the middle but} \\ \text{not beyond its extremity.} \\ (3) \text{ beyond the extremity;} \\ \text{hand very wide.} \end{array} \right.$	$\left\{ \begin{array}{l} A. \textit{brunneus}, \text{ Della Valle.} \\ A. \textit{melanops}, \text{ Walker.} \\ A. \textit{neapolitanus}, \text{ D. V.} \end{array} \right.$
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Finally, it is a question whether all three species should not be united to *A. Marionis*, Stebbing ('Challenger' Amphipoda), notwithstanding the immense distance between their respective habitats.

GITANA SARSII, *Boeck*.

St. 4 a, 6. Five specimens.

Fam. CRESSIDÆ, *Stebbing*.

CRESSA DUBIA (*Bate*).

St. 3. One specimen. Length 1.5 mm.

* It is also more slender and pointed than in *A. brunneus* and *A. melanops*, as correctly figured by Della Valle.

Not previously recorded in the Mediterranean. The quantity of pigment in this species is remarkable; the above specimen coloured a mixture of spirit, glycerine, and water in the tube $\frac{3}{4}$ in. deep by $\frac{1}{4}$ in. diameter, deep yellow.

Fam. LEUCOTHOIDÆ.

Genus LEUCOTHÖE.

L. SPINICARPA (*Abildgaard*).

St. 4 *a*. Three young.

*L. EURYONYX**, n. sp. (Pl. 27. figs. 24-26.)

St. 6. Three (?) young. Length 1.75 mm.

Body moderately compressed; first four coxal plates not quite as deep as the segments, the 1st expanded downwards, 2nd, 3rd, and 4th quadrate with rounded angles. Last epimeral plates of metasome notched above the posterior angle.

Head: upper margin exceeding that of the 1st segment of the mesosome by the length of the rostrum which is about one-third of the total length of the head; eyes small, round.

Upper antennæ as long as the head and first three segments; first joint of the peduncle about one-fourth longer than the second, which is about twice as long as the third; flagellum 3-jointed, about as long as the second joint of the peduncle.

Lower antennæ reaching a little beyond the end of the peduncle of the upper; second joint of the peduncle about one-third longer than the last, which is rather longer than the 3-jointed flagellum. No setæ on either pair of antennæ.

First gnathopods: carpal process slightly curved and gradually tapering to a point, not quite reaching the end of the propodos, the margins of which are parallel; dactylus about one-third the length of the propodos, slender and recurved near the point.

Second gnathopods: the carpal process, which is hollowed to receive the lower margin of the hand, reaches a little beyond the palmar angle of the propodos; it is fringed beneath with rows of setæ and is toothed at the distal end. The propodos has the anterior margin rather concave towards the apex, and produced considerably beyond the insertion of the dactylus, which is unusually short and wide; the minutely denticulate palm is

* "Wide-nailed," in allusion to the short, broad dactylus of the 2nd gnathopod.

about half the length of the posterior margin with which it forms an angle of about 45 degrees.

Peræopods: the first three pairs have the 1st joint very long and narrow; in the last two pairs it is about half as long again as wide; dactyli strong, about half as long as the preceding joint.

Uropods: the shorter ramus of the second pair reaches the distal end of the peduncle of the 3rd pair, which project a little beyond the first pair.

Telson of the usual form, reaching nearly to the end of the 3rd uropod.

This little species differs from all others known to me in the projecting anterior angle of the propodos, its short and well-defined palm, and short, wide dactylus, from which it takes its specific name.

Fam. OEDICERIDÆ.

MONOCULODES GRISEUS (*Della Valle*).

Oedicerus griseus, Della Valle.

St. 5, 6. A female with ova and a few young. Length of female 3 mm.

PERIOCULODES LONGIMANUS (*Bate*).

St. 5. Many. St. 2 H. One.

Some specimens had the gnathopods shorter and wider than the typical form.

SYNHELIDIUM HAPLOCHELES (*Grube*).

St. 5, 2 H. A few.

HALIMEDON RECTIROSTRIS, *Della Valle*.

St. 5, 6. Five. Length 3-4 mm.

The rostrum in these specimens is not so long as figured by Della Valle, reaching only just beyond the end of the 1st joint of the upper antennæ.

Fam. IPHIMEDIÆ.

IPHIMEDIA MINUTA, *Sars*.

St. 3. Two. Length 2.5 mm.

Fam. CALLIOPIIDÆ.

APHERUSA BISPINOSA (*Bate*).

Pherusa bispinosa, Nebeski.

St. 1, 2 H. Common.

Fam. ATYLIDÆ.

PARATYLUS GUTTATUS (*Costa*). (Pl. 27. figs. 27, 28.)

Nototropis guttatus, *Costa*. *Nototropis spinulicauda*, *Costa*.

Atylus Costæ, *Heller*.

St. 2 H. Three young, the largest 3 mm.

Very like *P. vedlomensis* (*Bate*), from which it differs in the relative proportions of the joints of the upper antennæ and in the absence of the downward prolongation of the 1st joint of the 5th pair of legs (3rd peræopods). *Della Valle* is certainly wrong in referring this species to *Dexamine spinosa* (*Mont.*), as the mandible has a small 3-jointed palp.

DEXAMINE ? SPINOSA (*Mont.*).

St. 2 H. Three or four young.

The specimens resemble *D. Thea*, *Boeck*, rather than *D. spinosa*, but are too young for certain identification. *D. Thea* has not yet been recorded in the Mediterranean.

TRITÆTA GIBBOSA (*Bate*).

Dexamine dolichonyx, *Nebeski*, ♂.

St. 2 H. One. Length 2 mm.

GUERNEA COALITA (*Norman*).

St. 5, 2 H. Two young. Length 1.5 mm.

Fam. MELPHIDIPPIDÆ, *Stebbing*.

MELPHIDIPPA, n. sp. (Pl. 27. figs. 29, 30.)

St. 5. Four specimens. Length 3 mm.

This is an intermediate form between *Melphidippa*, *Boeck*, 1870, and *Melphidippella*, *G. O. Sars*, 1895. It has the 1st and 2nd gnathopods alike in form, with the carpus expanded as in the former genus, while the enormous eyes and small terminal joint of the mandibular palp belong to the latter. As usual in these genera, the legs &c. are too imperfect to enable one to describe the species properly. I am not aware that either genus has been recorded from the Mediterranean before.

Fam. GAMMARIDÆ.

GAMMARUS MARINUS, *Leach*.

St. 2. Several.

MÆRA SCISSIMANA (*Costa*).*Gammarus scissimanus*, *Costa*. *Mæra truncatipes*, *Della Valle*.

St. 2 H. Two males, one female. Length 5 mm.

The characteristic notch in the palm of the 2nd gnathopods is wanting in a young male. This may be the form described by Heller as *M. integrimana*, which appears to be the opinion of *Della Valle*, as he treats the two species as synonymous. A female taken with the males has the lower antennæ shorter and the limbs stouter.

MELITA PALMATA (*Mont.*).

St. 1 H. Three or four.

Fam. LILJEBORGIDÆ, *Stebbing*.*LILJEBORGIA PALLIDA*, *Bate*.

St. 3. Three. Length 3 mm.

GAMMARELLA BREVICAUDATA, *M.-Edw.*

St. 2 H. One young.

MEGALUROPUS AGILIS, *Norman*.

St. 6. One young.

Fam. AORIDÆ, *Stebbing*.*MICRODEUTOPUS ALGICOLA*, *Della Valle*.

St. 6. One male. Length 3.5 mm.

AORA GRACILIS, *Bate*.

St. 2 H. One male. Length 4 mm.

AUTONOË LONGIPES, *Liljeb.*

St. 3. Several young. St. 1 H. One female with ova, length 5 mm.

Fam. PHOTIDÆ.

LEPTOCHEIRUS GUTTATUS (*Grube*).

St. 2 H. Four specimens.

For some interesting observations on this genus see *Chevreux*, *Camp. Scient.*, fasc. xvi. *Amphipodes de l'Hirondelle*, pp. 90-92.

MEGAMPHOPUS CORNUTUS, *Norman*.

St. 4 b. One female. Length 2.5 mm.

Not previously recorded from the Mediterranean.

PHOTIS LONGICAUDATA (*Bate*).

Photis Reinhardi, Della Valle.

St. 2 H. One female. Length 2.25 mm.

I agree with M. Chevreux (*l. c.* p. 96) that Della Valle's figures &c. refer to this species.

Fam. AMPHITHOIDÆ, *Stebbing*.

PLEONEXES GAMMAROIDES, *Bate*.

St. 2 H. One young. Length 2 mm.

CAPRELLIDEA.

Fam. CAPRELLIDÆ.

PHTISICA MARINA, *Slabber*.

St. 6. Three or four.

CAPRELLA ACANTHIFERA, *Leach*.

St. 2 H. One young.

PANTOPODA.

AMMOTHEA ECHINATA (*Hodge*).

St. 1. One male.

COPEPODA.

Mr. I. C. Thompson, F.L.S., has kindly named the under-mentioned species for me:—

<i>Calanus gracilis</i>	St. 3, 4.
<i>Pleuromma abdominale</i>	St. 3, 4.
<i>Acartia Clausii</i>	St. 4.
<i>Temora dubia</i>	St. 4.
<i>Euchæta marina</i>	St. 3.
<i>Eucalanus attenuatus</i>	St. 3.
<i>Oithona spinifrons</i>	St. 4.
<i>Corycæus obtusus</i>	St. 4.
<i>Thalestris rufocincta</i>	St. 3.
<i>Oncæa mediterranea</i>	St. 4.
<i>Porcellidium viride</i>	St. 4.



MYIETIDAE (PARTIAL) - MACROSTYLIDAE

PLATE 27

EXPLANATION OF PLATE 27.

- Fig. 1. *Mysidopsis* ? *serraticauda*, ♀. Upper antenna.
 2. " " Lower antenna.
 3. " " Mandible.
 4. " " 2nd maxillipede.
 5. " " Leg of the 1st (?) pair.
 6. " " Telson and uropods.
 6 a. " " Extremity of telson.
 7. *Hyssura spinicauda*. Dorsal view.
 8. " " Head.
 9. " " Leg of the 2nd pair.
 9 a. " " Do., part of the palm highly magnified.
 10. " " Leg of the 1st pair.
 11. " " Telson and uropods.
 12. *Pleurocope dasyura*. Dorsal view.
 13. " " 1st maxilla.
 14. " " 2nd maxilla.
 15. " " Maxillipede.
 16. " " Leg of the 1st pair.
 17. " " Leg of the last pair.
 18. " " Operculum.
 19. *Allorchestes aquilina*, ♂. 2nd gnathopod.
 20. *Allorchestes plumicornis*, ♀. Lower antenna.
 21. " " 2nd gnathopod.
 22. *Metaphoxus pectinatus*. Head, &c.
 23. *Phoxus simplex*, Sp. Bate. Head, &c. From the type specimen in the British Museum.
 24. *Leucothoë euryonyx*. Lateral view.
 Figs. 24 a, 24 b. *Leucothoë euryonyx*. Upper and lower antennæ.
 Fig. 25. *Leucothoë euryonyx*. 1st gnathopod.
 26. " " 2nd gnathopod.
 26 a. " " 2nd gnathopod, extremity of carpus, and angle of propodos.
 27. *Paratylys guttatus*. Mandible.
 28. " " 3rd peræopod.
 29. *Melphidippa* ? sp. 1st gnathopod.
 30. " " 2nd gnathopod.